

**REMARKS**

Reconsideration is requested.

Claims 1-114 have been canceled, without prejudice.

Claims 115- 150 have been added and are similar to now-canceled claims 54, 69, 82-88 and 115-119. No new matter has been added.

Claims 115-150 are pending and are submitted to define the elected subject matter. Claims 115-128 are similar to now-canceled claims 54, 69, 82, 83, 86, and 89. The subject matter of now-canceled claim 93, and the subject matter of claimed dependent therefrom, to the extent they recited or referred to respiratory tract microorganism specific nucleic acid sequences, have not been included in the amended claims. Claims 129-150 recite additionally disclosed patentable elements and are supported by the specification as described in the following. The Examiner is urged to appreciate that the examined SEQ ID NOs: 111-115, and the complement and RNA forms thereof are 16S-23S rRNA spacer nucleic acids and taxon specific probes, such that the applicants respectfully submit that the Examiner has searched the subject matter of Groups I and III of page 2 of the Office Action dated July 23, 2002 (Paper No. 5). Claims 119, 120 and 137 are arguably defined by the subject matter of the Examiner's Group II of Paper No. 5.

The claimed spacer probe is described, for example, on page 10, lines 9-11, and page 23, lines 25-28 of the specification. The Examiner will appreciate that the spacer probe of the claims will hybridize to a recited target and will be distinct from, for example, the entire chromosome containing the recited nucleic acid sequence as hybridization requires structural constraints described, for example, on pages 7-9 of the

specification and as recognized by one of ordinary skill in the art. Examples of the same are described in Example 1 of the specification.

The recited labeled probe embodiment is described, for example, at page 13, lines 5-9 of the specification.

The recited lengths of the claimed probes are described, for example, at page 2, lines 12-14, and page 10, lines 15-21 of the specification. Example 1 of the specification exemplifies probes of the invention. Specifically, Example 1 further exemplifies probes PA1, PA2, PA3 and PA5 which contain contiguous nucleic acids of SEQ ID NO:111 (i.e., bases 147-168, 274-298, 371-394 and 366-389, respectively).

The recited hybridization conditions of the claims are described, for example on page 9, lines 16-18 of the specification and exemplified in Example 1. 1xSSC is defined, for example, at page 65, lines 18-19 of the specification.

No new matter has been added.

The Examiner's examination of at least SEQ ID NOs: 111-115, drawn to *Pseudomonas* sequences is acknowledged, with appreciation. See, page 2 of the Office Action dated March 13, 2003 (Paper No. 8). The applicants submit that the pending claims define *Pseudomonas*-specific sequences and methods of using the same. Examination of all the pending claims is requested.

The specification has been amended to insert a new Title, in response to the Examiner's comment of ¶13, page 3 of Paper No. 8. The specification has been amended to ensure that the specification includes a reference to the parent applications (the specification was amended in this regard on the filing cover sheet dated August 17, 2001 and the Examiner is requested to ensure that one of the above cross-reference or

the earlier submitted cross-reference amendment is included in the application). The specification has been amended to include a new Abstract, in response to the Examiner's comment of ¶4. pages 3-4 of Paper No. 8. No new matter has been added.

Withdrawal of the objections to the Title and Abstract is requested.

The Rule 75 objection of claim 55 is moot in view of the above.

The Section 101 rejection of claims 54, 55, 69 and 89 is moot in view of the above. The presently claimed isolated nucleic acid sequences are submitted to define patentable subject matter, as apparently recognized by the Examiner (see, page 5, first complete sentence of Paper No. 8), irrespective of whether the claims are "open" in the recitation of "comprising".

The Section 102 rejection of claims 54, 55 and 89 over Olsen (U.S. Patent No. 4,508,832) is moot in view of the above. The claims are submitted to be patentable over Olsen and consideration of the following in this regard is requested.

While the applicants acknowledge the Examiner's suggestion that amending the claims to recite "consisting of", in place of the previously recited "comprising", to obviate the rejection, the applicants respectfully submit that such an amendment should not be required.

The Examiner asserts that Olsen discloses "isolated chromosomal DNA from *Pseudomonas aeruginosa*" (see, page 5 of Paper No. 8) however the indicated column 6, lines 3-59, only describes "harvested" chromosomal DNA of *Pseudomonas aeruginosa* strain PAO1.

Claims 115 and 124 are similar to the subject matter of now-canceled claims 54, 55 and 89. Claim 124 does not recite the open "comprising" transition which was

apparently the basis for the Examiner's Section 102 rejection of claim 89, and claim 116 does not include the previous open transition. Claims 116 and 124, as well as the other remaining claims, are believed therefore to be patentable over Olsen.

As for claim 115, the applicants respectfully submit that one of ordinary skill in the art would not expect the "harvested" chromosomal DNA of Olsen to necessarily contain the claimed nucleic acid sequence. Specifically, in column 6, lines 3 to 46, Olsen explains the "standard" procedure for the bank preparation without mentioning any specific micro-organism. In the next paragraph (lines 47 to 59), which was cited by the Examiner, Olsen explains that having regard to *Pseudomonas aeruginosa*, the "standard" procedure was not strictly followed since after the cells were harvested and lysed, the "suspensions were given two 30 sec pulses (...) to fragment the chromosome".

In other words, the chromosomal DNA was not precipitated (isolated) prior to the fragmentation but after the fragmentation. And because of this step of fragmentation, there is no guarantee that the complete chromosomal DNA can be recovered, and of course there is no evidence that any of the fragments is a complete sequence and/or contiguous sequence with respect to the presently claimed region (i.e., SEQ ID NO:111). Accordingly, it is not necessarily certain that the spacer region of the presently claimed invention is contained in the banks of Olsen. The applicants further note in this regard that none of the markers described in Table 6 of Olsen are related to the spacer region of the presently claimed invention.

The claims are submitted to be patentable over Olsen.

The Section 102 rejection of claims 54, 55 and 69 over Atlas (U.S. Patent No. 5,298,392) is moot in view of the above. The claims are submitted to be patentable over Atlas and consideration of the following in this regard is requested.

While the applicants acknowledge the Examiner's suggestion that amending the claims to recite "consisting of", in place of the previously recited "comprising", to obviate the rejection, the applicants respectfully submit that such an amendment should not be required.

The Examiner asserts that Atlas discloses "isolated genomic DNA from *Pseudomonas putida*" (see, page 6 of Paper No. 8) in column 16, lines 12-16 of Atlas. In fact, the cited passage only describes *P. putida* genomic DNA without an indication of whether the same is isolated, such as is required by the presently claimed invention. Moreover, the applicants believe that Atlas refers to specific genes, such as lacZ gene, lamB gene, Uida gene and 5S rRNA gene which do not encompass the 16S-23S rRNA sequence of the presently claimed invention.

Claims 115 and 116 are similar to the subject matter of now-canceled claims 54, 55 and 69. Claim 116 does not recite the open transition which was apparently the basis for the Examiner's Section 102 rejection of claims 54, 55 and 69. Claim 116 is believed therefore to be patentable over Atlas.

As for claim 115, the applicants respectfully submit that one of ordinary skill in the art would not expect the genomic DNA of Atlas described in column 16, lines 12-16 to necessarily contain the claimed nucleic acid sequence. Specifically, there is no evidence of record that the genomic DNA of Atlas contains the 16S-23S rRNA spacer sequence. That is, there is not evidence of record that the genomic DNA of Atlas is a

complete sequence and/or contiguous sequence with respect to the presently claimed region (i.e., SEQ ID NO:115). The claims are submitted to be patentable over Atlas.

Claim 149 is similar to claim 115 but for the exclusion of SEQ ID NOs: 111 and 115, which are the only basis of the Examiner's rejection of claim 54 over Olsen, Atlas and Ohno (U.S. Patent No. 5,358,846) and Molin (U.S. Patent No. 5,545,541), as further distinguished below. Claim 149 is therefore submitted to be additionally patentable over the cited art.

The Section 102 rejection of claim 82 over Ohno or Molin is moot in view of the above. The pending claims are submitted to be patentable over Ohno and Molin. consideration of the following in this regard are requested. Specifically, the applicants note the subject matter of now-canceled claim 82 is most closely related to claim 117, which refers to the detection of the presence of a nucleic acid according to claim 116, which refers to the specific SEQ ID NOs: 111-115 of the present invention. Of the remaining pending claims, the cited art fails to teach or suggest a spacer probe, or the use of the same, as presently claimed. The claims are submitted therefore to be patentable over the cited art.

The Section 103 rejection of claims 83, 86, 93, 103, 109, 113 and 114 over Ohno or Molin is moot in view of the above. The cited art fails to teach or suggest a spacer probe, or the use of the same, as presently claimed. Now-canceled claims 83 and 86 are most similar to claim 118 and 121, which are dependent however on claim 117 and require the spacer sequence of claim 116. Claims 118 and 121 are submitted therefore to be patentable over the cited art. The subject matter of now-canceled claims 93, 103, 109, 113 and 114 has not been repeated, without prejudice, in view of the Examiner's

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Rule 75 objection. The remaining claims are similarly submitted to be patentable over the cited art.

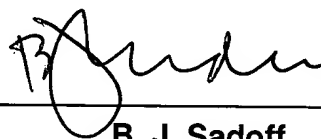
The applicants acknowledge, with appreciation, the examiner's comment that the particular spacer sequences of SEQ ID NOs: 111-115 are considered to be allowable subject matter. See, page 8 of Paper No. 8. At a minimum therefore, claim 116, and claims dependent thereon or therefrom, are submitted to be allowable and a Notice to that effect is requested.

The claims are submitted to be in condition for allowance and Notice to that effect is requested. The Examiner is requested to contact the undersigned in the event anything further is required in this regard.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By: \_\_\_\_\_



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